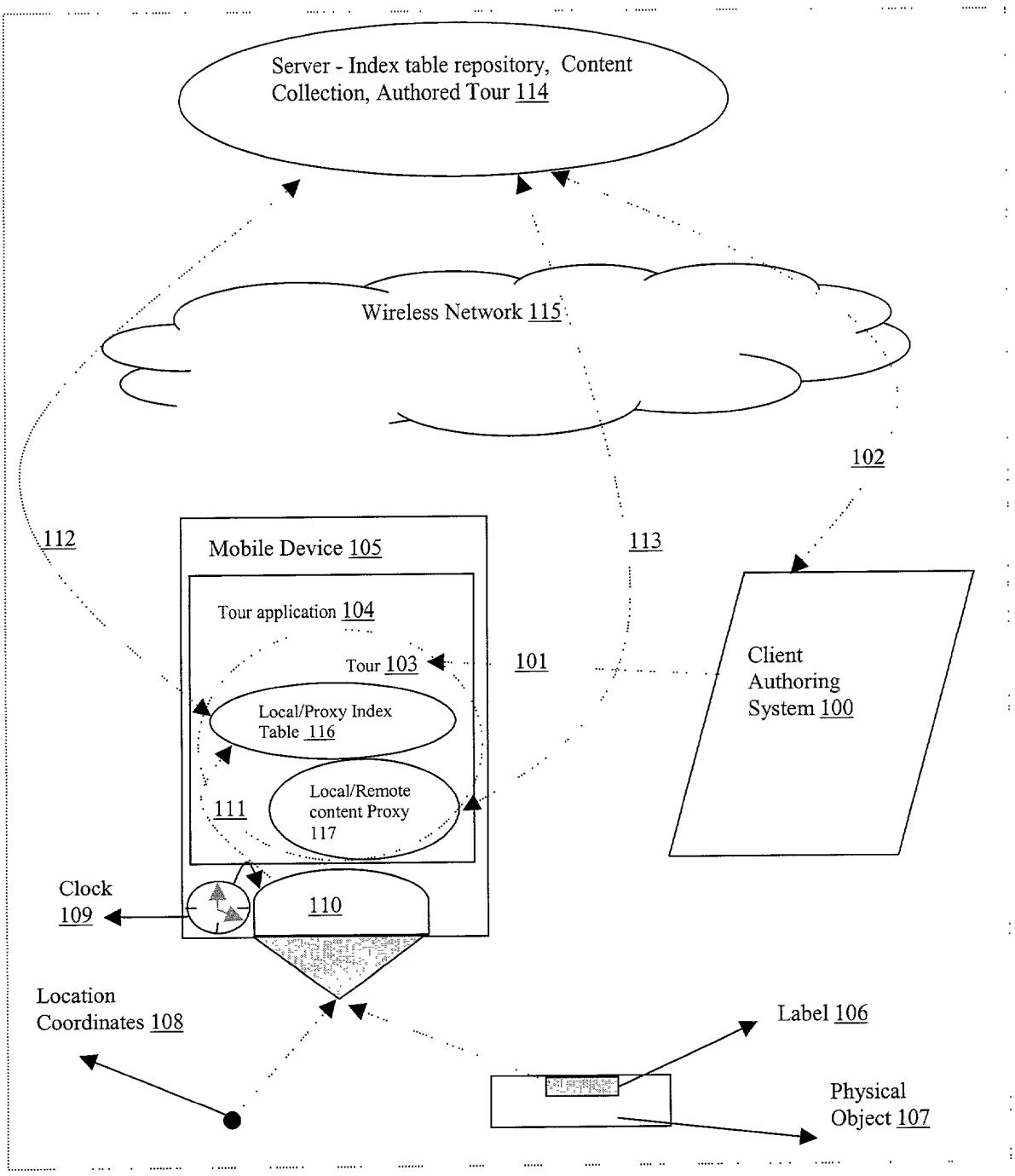

Server - Index table repository, Content Collection, Authored Tour 114
Wireless Network 115
102
112
113
Mobile Device 105
Tour application 104
Tour 103
101
Client Authoring System 100
Local/Proxy Index Table 116
Local/Remote content Proxy 117
111
Clock 109
110
Location Coordinates 108
Label 106
Physical Object 107

FIG. 1

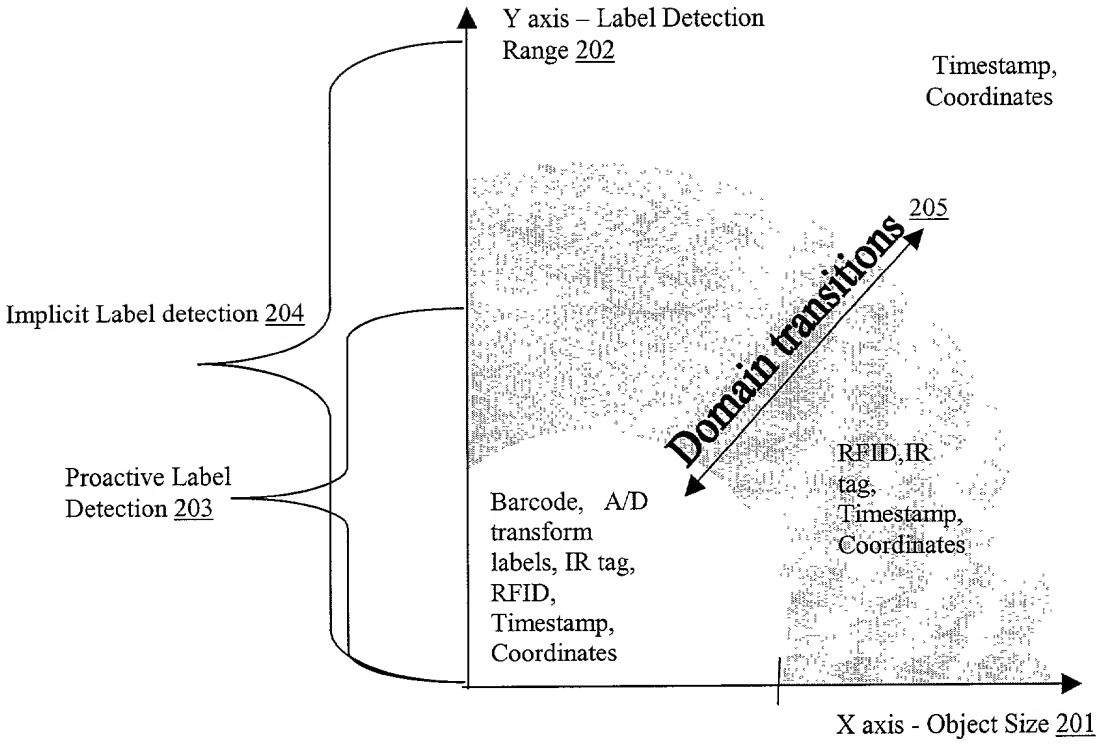

Y axis – Label Detection Range 202
Timestamp, Coordinates
205
Domain transitions
Implicit Label detection 204
Proactive Label Detection 203
Barcode, A/D transform labels, IR tag, RFID, Timestamp, Coordinates
RFID, IR tag, Timestamp, Coordinates
X axis - Object Size 201

FIG. 2

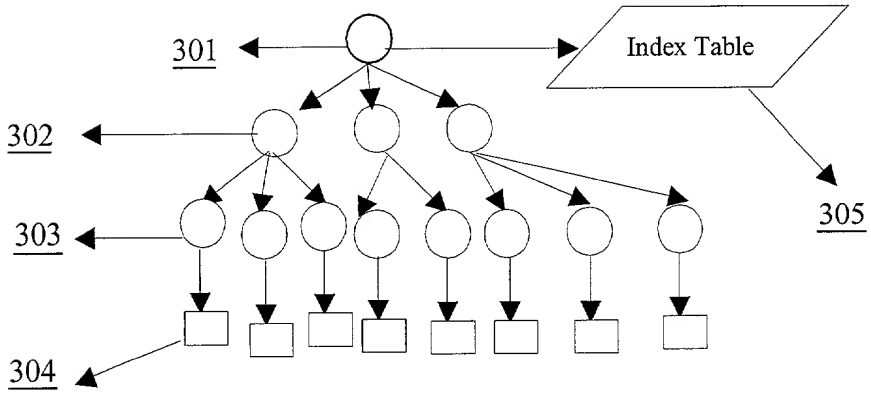

301
Index Table
302
303
304
305

FIG. 3a

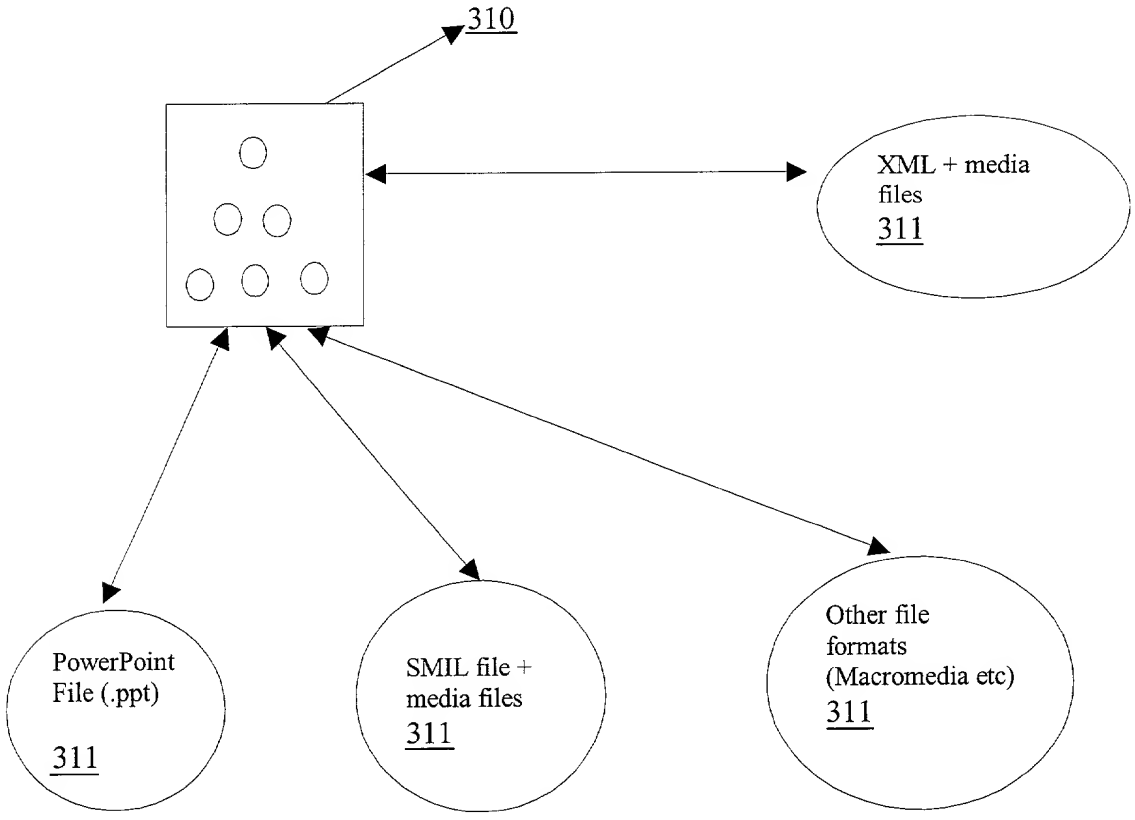
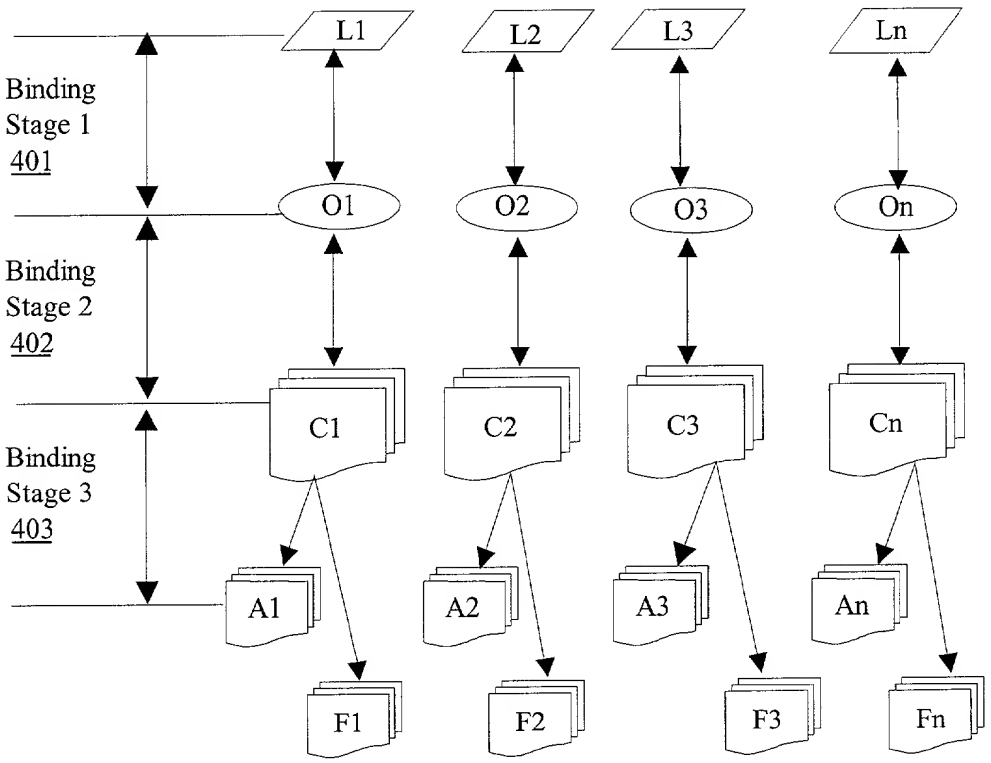

310
XML + media files
311
PowerPoint File (.ppt)
311
SMIL file + media files
311
Other file formats (Macromedia etc)
311

FIG. 3b




L1-Ln - Labels
O1-On - Objects
C1-Cn - Multilingual authored content
A1-An - Annotation done by user
F1-Fn - Feedback provided by user

| **Binding stage** | **Object Specific Label (e.g. UPC code)** | | **Custom Labeling** | |
|---|---|---|---|---|
| | **Labeling/authoring using preferred embodiment** | **Labeling/authoring <u>without</u> using preferred embodiment** | **Labeling/authoring using preferred embodiment** | **Labeling/authoring <u>without</u> using preferred embodiment** |
| Stage 1, Label ⇔ Object binding | correspondence already in place | correspondence already in place | **Any order** – correspondence preserved by system | Specific labeling – correspondence preserved by user |
| Stage 2, Object ⇔ Content | **Any order** – correspondence preserved by system | Specific authoring – correspondence preserved by user | **Any order** – correspondence preserved by system | Specific authoring – correspondence preserved by user |
| Stage 3, Content ⇔ Annotation Content ⇔ Feedback | **Any order** – correspondence preserved by system | Specific authoring – correspondence preserved by user | **Any order** – correspondence preserved by system | Specific authoring – correspondence preserved by user |

**FIG. 4**

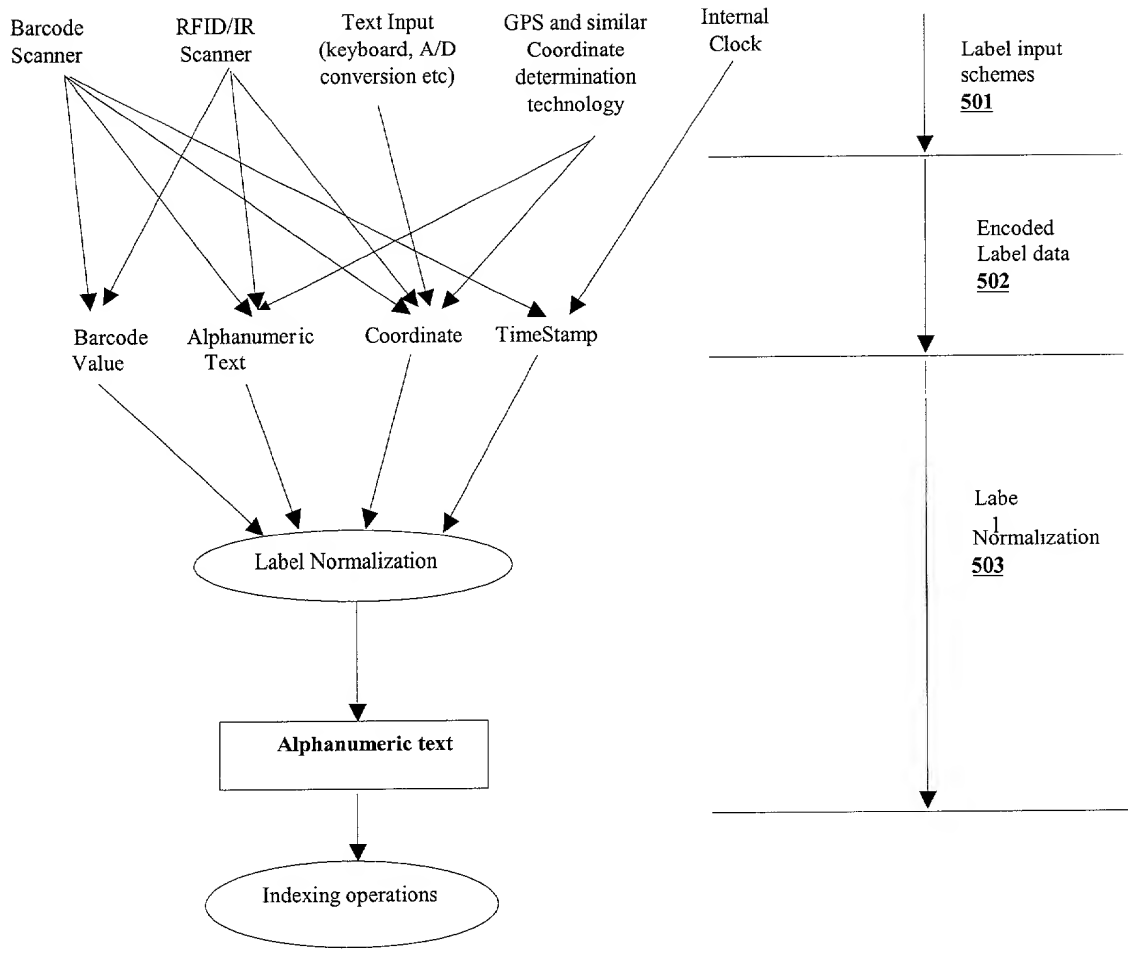

Barcode Scanner
RFID/IR Scanner
Text Input (keyboard, A/D conversion etc)
GPS and similar Coordinate determination technology
Internal Clock
Label input schemes 501
Encoded Label data 502
Barcode Value
Alphanumeric Text
Coordinate
TimeStamp
Label Normalization 503
Label Normalization
Alphanumeric text
Indexing operations

FIG. 5a

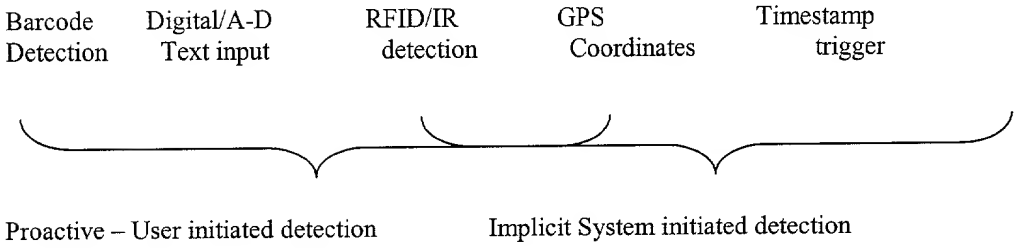

Barcode Detection
Digital/A-D Text input
RFID/IR detection
GPS Coordinates
Timestamp trigger
Proactive – User initiated detection
Implicit System initiated detection

FIG. 5b

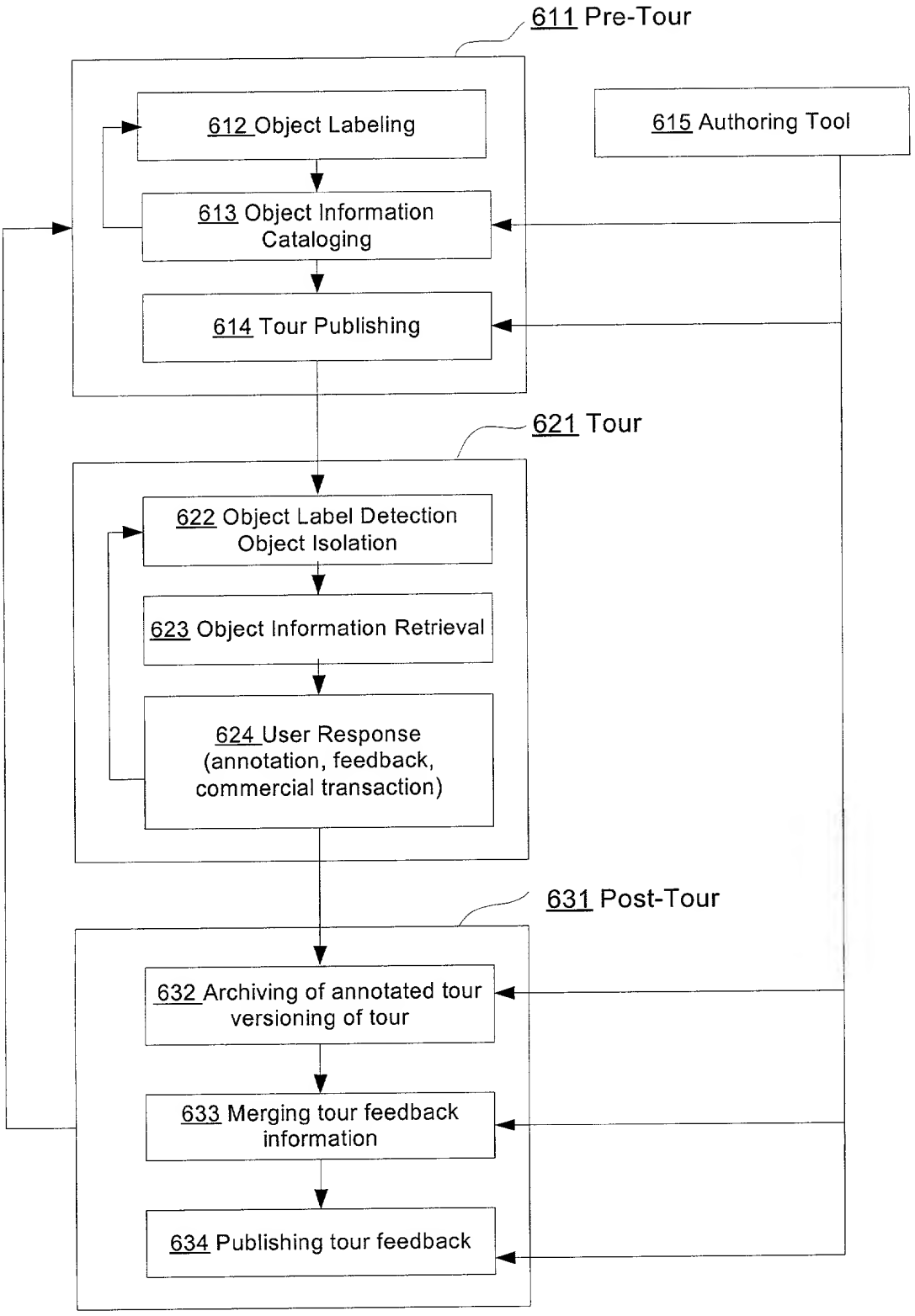

611 Pre-Tour
612 Object Labeling
615 Authoring Tool
613 Object Information Cataloging
614 Tour Publishing
621 Tour
622 Object Label Detection Object Isolation
623 Object Information Retrieval
624 User Response (annotation, feedback, commercial transaction)
631 Post-Tour
632 Archiving of annotated tour versioning of tour
633 Merging tour feedback information
634 Publishing tour feedback

FIG. 6

**Pre-Tour Process: Tour Authoring**

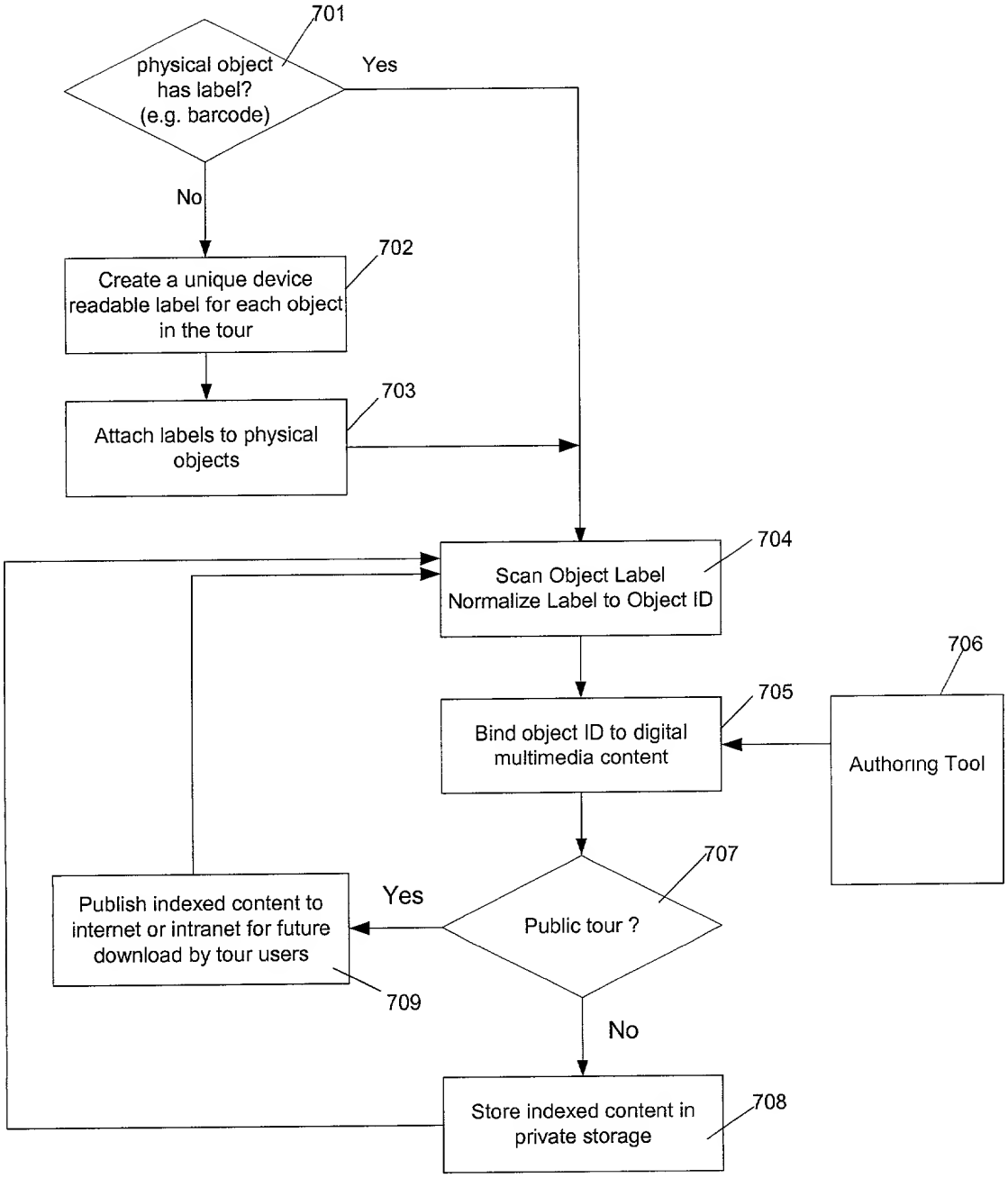



FIG. 7

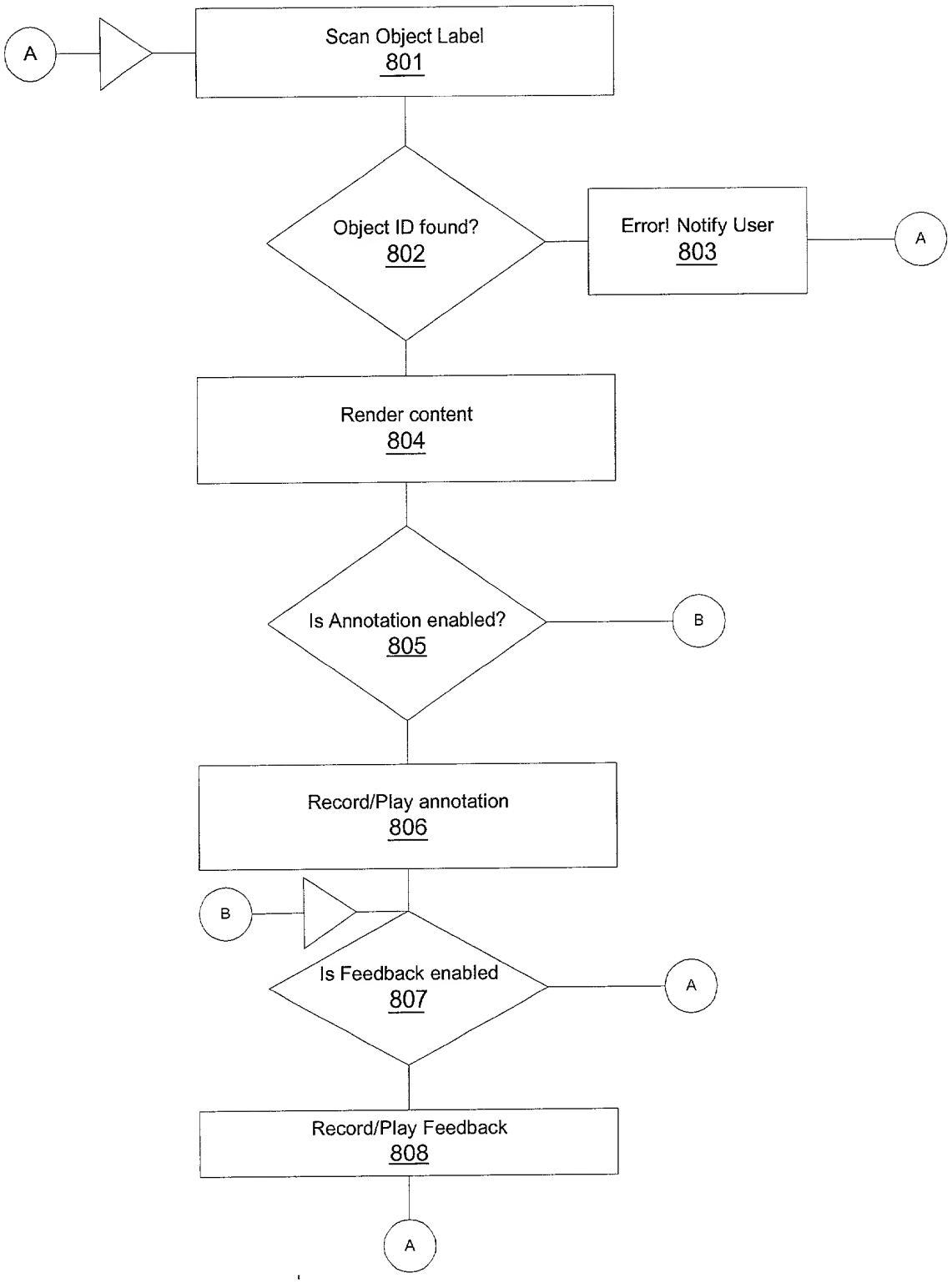

A
Scan Object Label
801
Object ID found?
802
Error! Notify User
803
A
Render content
804
Is Annotation enabled?
805
B
Record/Play annotation
806
B
Is Feedback enabled
807
A
Record/Play Feedback
808
A

FIG. 8

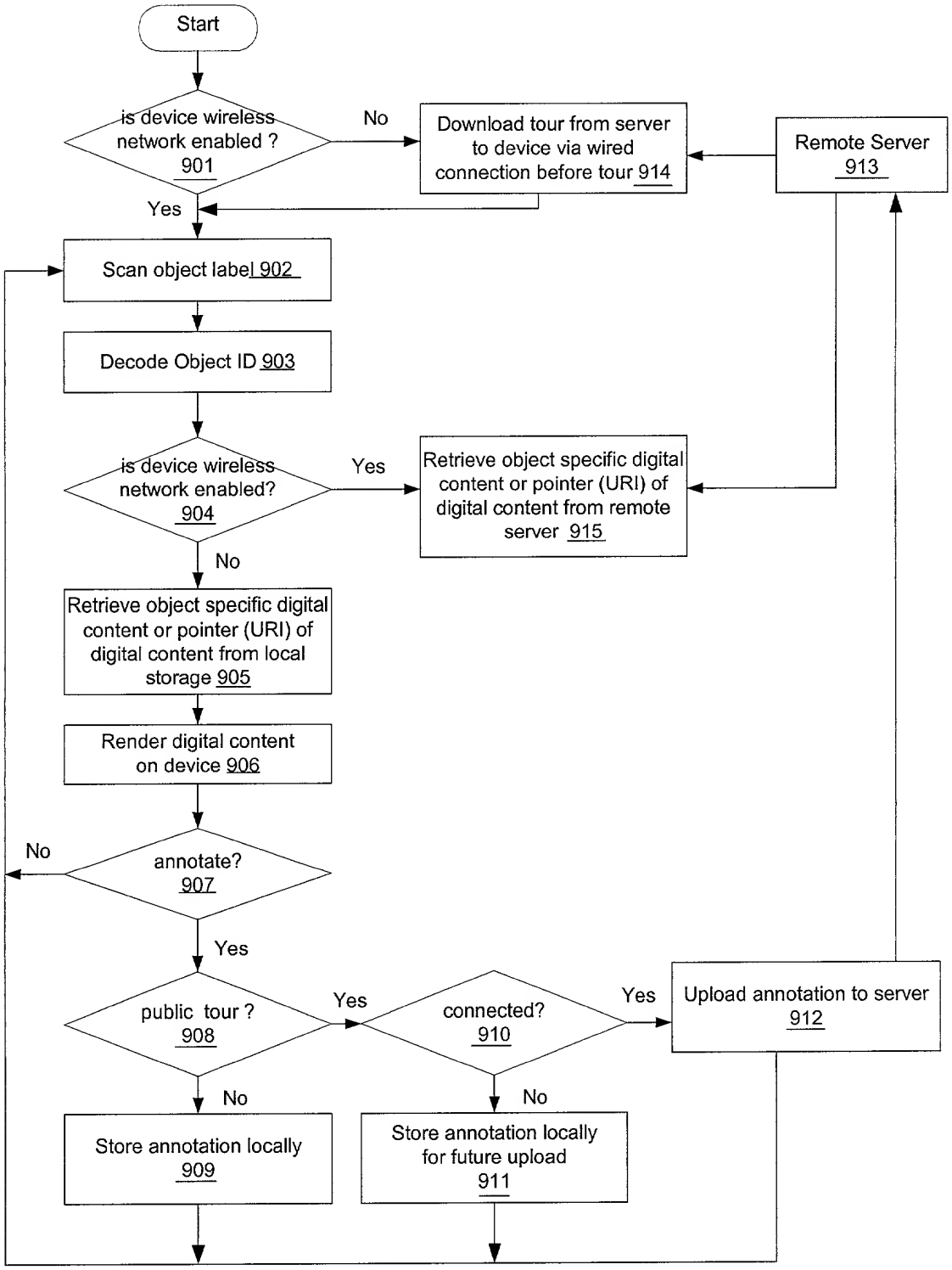

Start
is device wireless network enabled ? 901
No
Download tour from server to device via wired connection before tour 914
Remote Server 913
Yes
Scan object label 902
Decode Object ID 903
is device wireless network enabled? 904
Yes
Retrieve object specific digital content or pointer (URI) of digital content from remote server 915
No
Retrieve object specific digital content or pointer (URI) of digital content from local storage 905
Render digital content on device 906
No
annotate? 907
Yes
public tour ? 908
Yes
connected? 910
Yes
Upload annotation to server 912
No
Store annotation locally 909
No
Store annotation locally for future upload 911

FIG. 9

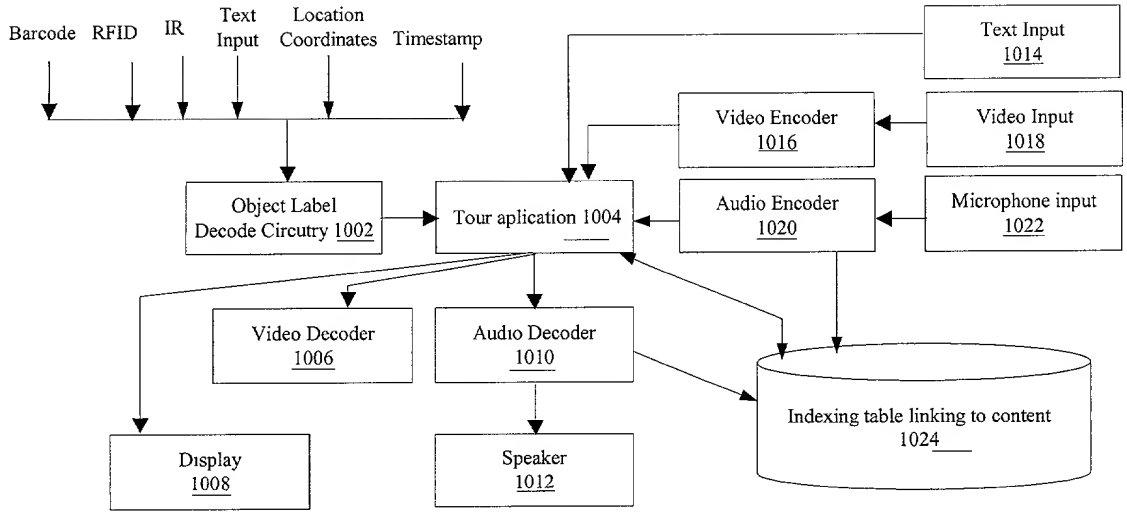
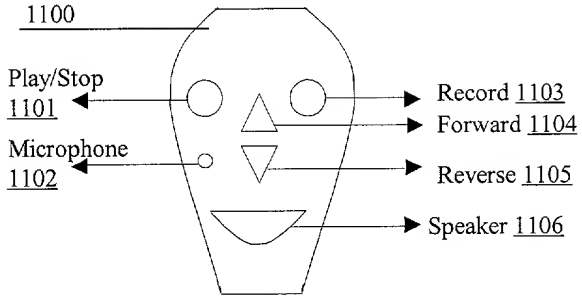
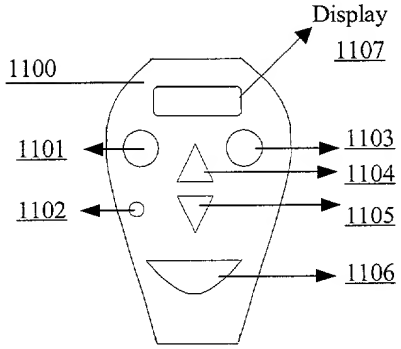

Barcode
RFID
IR
Text Input
Location Coordinates
Timestamp
Text Input 1014
Video Encoder 1016
Video Input 1018
Object Label Decode Circuitry 1002
Tour aplication 1004
Audio Encoder 1020
Microphone input 1022
Video Decoder 1006
Audio Decoder 1010
Indexing table linking to content 1024
Display 1008
Speaker 1012

FIG. 10

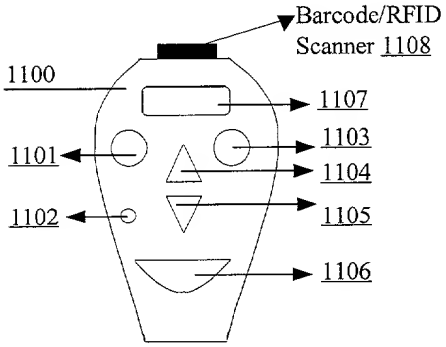
**Front View – version without display**



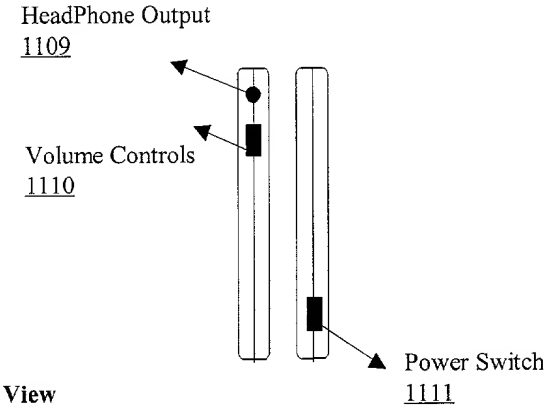

**Front View – version with display**




**Front View - version with scanner**




**Side Views**




**Rear View**

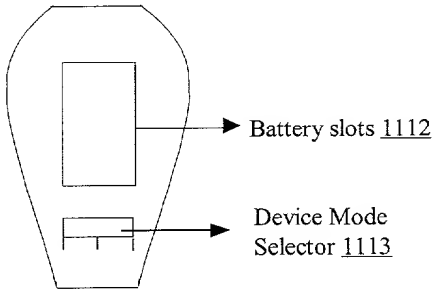



**FIG. 11**

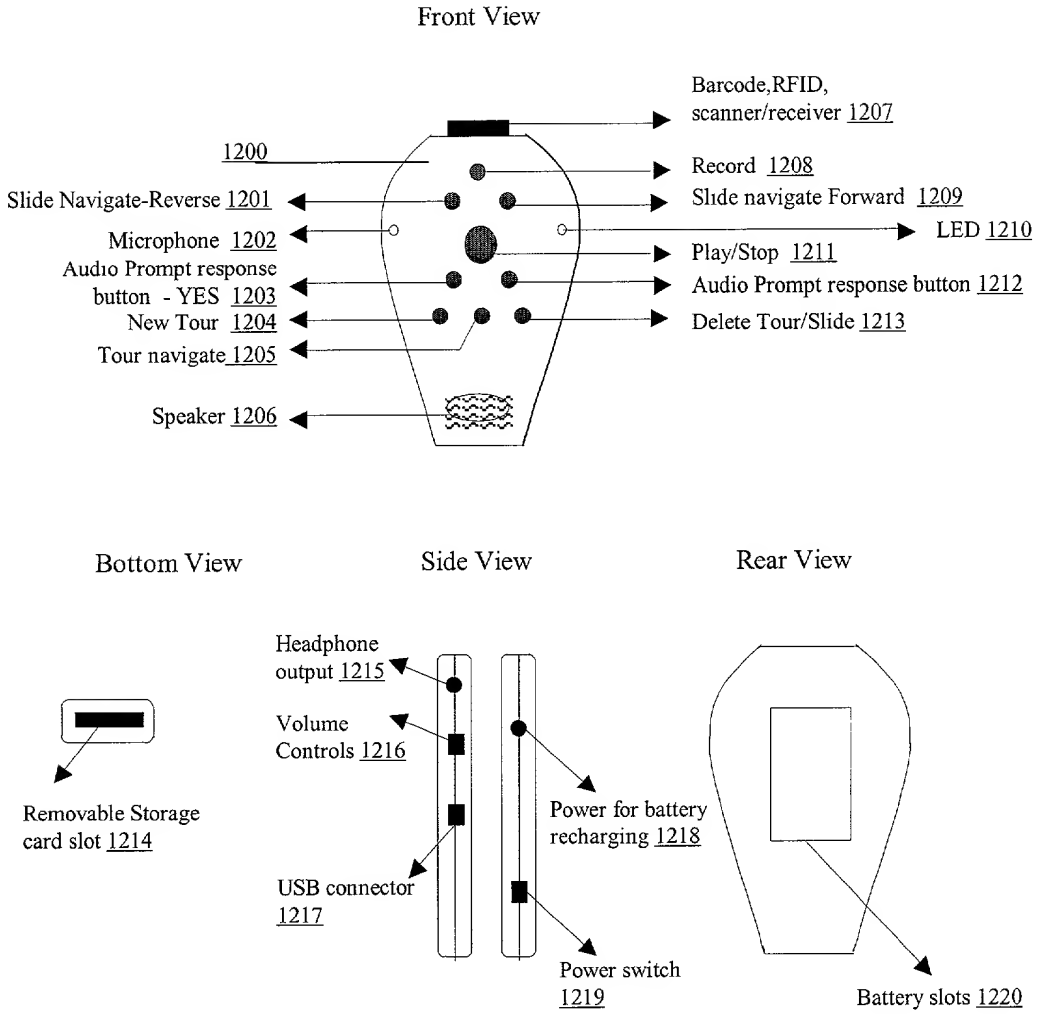

Front View
Barcode,RFID,
scanner/receiver 1207
1200
Record 1208
Slide Navigate-Reverse 1201
Slide navigate Forward 1209
Microphone 1202
LED 1210
Play/Stop 1211
Audio Prompt response
button - YES 1203
Audio Prompt response button 1212
New Tour 1204
Delete Tour/Slide 1213
Tour navigate 1205
Speaker 1206
Bottom View
Side View
Rear View
Headphone
output 1215
Volume
Controls 1216
Removable Storage
card slot 1214
Power for battery
recharging 1218
USB connector
1217
Power switch
1219
Battery slots 1220

**FIG. 12**